

REMARKS/ARGUMENTS

Status of Claims

Claims 1 to 15 remain in the application. Claims 16 to 30 are cancelled.

35 U.S.C. § 103 Claim Rejections

In paragraph 4 of the Office Action, the Examiner rejects claims 1-15 under 35 U.S.C. § 103(a) as being unpatentable over Ramos et al. (U.S. Patent No. 7,072,663) in view of Shakhgildian et al. (U.S. Patent No. 6,584,325). Applicant respectfully traverses the rejection for reasons stated below.

The law on obviousness under 35 U.S.C. 103 was recently addressed in ***KSR Int'l v. Teleflex, Inc.***, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007). Following this, examination guidelines were released on October 10, 2007 in regards to determining obviousness under 35 U.S.C. 103. According to these guidelines, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in ***Graham v. John Deere Co.*** 383 U.S. 1,148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

- (1) Determining the scope and content of the prior art;
- (2) Ascertaining the differences between the claimed invention and the prior art; and
- (3) Resolving the level of ordinary skill in the pertinent art; and
- (4) Considering objective evidence present in the application, when present, indicating obviousness or non-obviousness.

The first three Graham factors, including the secondary considerations of (4) when present, are the controlling inquiries in any obviousness analysis. Once the findings of fact are articulated, Office personnel must provide an explanation to support an obviousness rejection under 35 U.S.C. 103. According to ***KSR***, for the Patent Office to properly combine references in

support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references.

Applicant's analysis below demonstrates that the Examiner has failed to properly conform to the aforementioned guidelines for a finding of obviousness under 35 U.S.C. 103.

Claim 1

Applicant submits that claim 1 of the present application is patentable over Ramos and Shakhgildian, as the findings of fact as articulated by the Examiner are inaccurate. In particular, the Examiner has not properly determined (i) the scope of the prior art nor (ii) the differences between the claimed invention and the prior art. Furthermore, the Examiner has not provided a valid explanation to support an obviousness rejection under 35 U.S.C. 103. Applicant's reasoning is detailed below.

Determining The Scope Of The Prior Art

Ramos

The Examiner concedes that Ramos does not explicitly disclose a prioritization algorithm that separates candidate base stations into uplink and downlink candidate sets. Applicant agrees with this assessment of Ramos.

The Examiner also acknowledges that Ramos fails to teach determining a predominant direction of traffic with respect to the terminal, and if the predominant direction of traffic is in an uplink direction, selecting at least one optimum base station from the uplink candidate set. Again, Applicant agrees with this assessment of Ramos.

Although the Examiner does not explicitly concede that Ramos fails to teach the feature wherein "if the predominant direction of traffic is in a downlink direction, selecting at least one optimum base station from the downlink candidate set", this concession must be implicit in the Examiner's acknowledgement that Ramos fails to teach "determining a predominant direction of traffic with respect to the terminal", as clearly a selection from a downlink candidate set cannot

be made based on a predominant direction of traffic with respect to the terminal if the predominant direction of traffic with respect to the terminal is not determined.

Shakhgildian

The Examiner has pointed to column 3, lines 1 to 7 of Shakhgildian in support of the assertion that according to Shakhgildian "a subscriber unit receives uplink characteristics information from a target set of base stations", which the Examiner has equated with "storing an uplink candidate set listing". However, Shakhgildian, like Ramos, fails to teach storing separate uplink and downlink candidate sets, rather Shakhgildian simply teaches that "uplink characteristics information" may be considered when selecting a serving base station from a single common target set. See, for example, column 5, lines 36 to 43 of Shakhgildian, which state that "as well as considering the downlink pilot signal power level, the subscriber unit thus compares the required RACH transmit power and/or uplink interference floors and/or RACH congestion indicators in the candidate cells to determine the optimum serving base station. Thus the base station selection is based on both uplink and downlink performance giving a significantly more efficient cell selection" (emphasis added).

Accordingly, it should be clear that while Shakhgildian may teach that base station selection is based on a consideration of both uplink and downlink performance, the selection is still made from a single candidate base station target set. As such, there is no valid basis on which the Examiner can conclude that the target set taught by Shakhgildian represents "an uplink candidate set".

The Examiner points to column 6, lines 6 to 16 of Shakhgildian as having taught "determining a predominant direction of traffic with respect to the terminal ... [and] if the predominant direction of traffic is in an uplink direction, selecting at least on optimum base station from the uplink candidate set". However, column 6, lines 6 to 16 of Shakhgildian , and Shakhgildian as a whole, merely teaches that "if no cell [in the target set] has both the best uplink and downlink performance indicator then if a short data message is to be transmitted, the serving base station will be selected as the cell having the best uplink performance. However, if instead a call is being setup, the serving base station will be selected as the base station having the best

combined performance" (emphasis added). As such, it should be clear that Shakhgildian merely teaches that if a short data message, i.e., a message requiring more uplink data than downlink data, is to be transmitted to the network, a base station from the single target set is selected only on the basis of uplink performance, whereas a base station is selected from the single target set based on combined uplink and downlink performance for full duplex calls.

In view of the foregoing, it should be appreciated that selecting a base station from a single target set on the basis of uplink performance for a short data message transmission, as taught by Shakhgildian, cannot be equated with "determining a predominant direction of traffic with respect to the terminal...[and] if the predominant direction of traffic is in the uplink direction, selecting at least one optimum base station from the uplink candidate set", as simply selecting from a common target set of base stations on the basis of different selection criteria for different types of messages, i.e., selecting based on the uplink performance indicator only for short data messages and based on a combined performance indicator for full duplex calls, is not the same as selecting from different candidate sets depending on the predominant direction of traffic with respect to the terminal".

Ascertaining The Differences Between The Prior Art And The Claims At Issue

Independent claim 1 recites:

1. A method of selecting at least one base station for communicating with a terminal in a wireless communication system, comprising the steps of:

storing an uplink candidate set listing at least one candidate uplink base station;

storing a downlink candidate set listing at least one candidate downlink base station;

determining a predominant direction of traffic with respect to the terminal;

if the predominant direction of traffic is in an uplink direction, selecting at least one optimum base station from the uplink candidate set; and

if the predominant direction of traffic is in a downlink direction, selecting at least one optimum base station from the downlink candidate set.

Ramos

As noted above, the Examiner concedes that Ramos does not explicitly disclose a prioritization algorithm that separates candidate base stations into uplink and downlink candidate sets. Ramos teaches only one candidate list, because Ramos is strictly directed to establishing a compromise between uplink and downlink performance. Accordingly, Ramos teaches away from maintaining separate lists, as clearly a compromise between uplink and downlink performance, which is the entire objective of Ramos, is not possible with two separate base station candidate lists for the uplink and the downlink. See, for example, col. 7, lines 15 to 32, which describe a prioritization scheme in which each cell is given a single weight based on the compromise between uplink and downlink performance.

Shakhgildian

As with Ramos, Shakhgildian is strictly directed to establishing a compromise between uplink and downlink performance, which should be clear from the fact that, as noted above, Shakhgildian only discloses maintaining a single candidate base station target set from which a serving base station is selected. See also, column 6, lines 58 to 61 of Shakhgildian, which explicitly states that its intended purpose is to provide "a better balance between downlink and uplink quality criteria in cell selection". Accordingly, like Ramos, Shakhgildian teaches away from maintaining separate candidate lists.

In view of the foregoing, Applicant submits that the Examiner has not properly determined the differences between the claimed invention and the prior art. Therefore, the findings of fact as articulated by the Examiner are improper.

Explanation To Support An Obviousness Rejection

As noted above, for the Patent Office to properly combine references in support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in

the art would have sought to combine the respective teachings of the applied references. The examination guidelines indicate that "The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious." The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" Applicant appreciates that the Examiner has articulated a reason why the claimed invention would have been obvious. However, for reasons detailed below, the Examiner's articulated reason can not be regarded as being valid.

As noted earlier, the Examiner concedes that Ramos does not explicitly disclose a prioritization algorithm that separates candidate base stations into uplink and downlink candidate sets. While Ramos may disclose arranging a single base station candidate list based on uplink, downlink, or both, in order to establish a compromise between uplink and downlink performance, this explicitly teaches away from the present invention, as clearly a compromise between uplink and downlink performance, which is the entire objective of Ramos, is not possible with two separate base station candidate lists for the uplink and the downlink.

The Examiner has relied on Shakhgildian as having disclosed "determining a predominant direction of traffic with respect to the terminal ... [and] if the predominant direction of traffic is in an uplink direction, selecting at least one optimum base station from the uplink candidate set". However, as noted above, Shakhgildian does not even suggest storing separate uplink and downlink candidate sets, and merely teaches that for short data messages, which are predominantly uplink directed communications, a serving base station is selected from a common target set of base stations based only on uplink performance. As such, since neither reference teaches separate uplink and downlink candidate sets, there is clearly no support for the Examiner's allegation that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prioritization algorithm of Ramos to distinguish candidate cells in the uplink and choose the optimum target cell based on a predominant direction of traffic" having regard to the teachings of Shakhgildian.

In addition to the foregoing distinctions, the Examiner does not even discuss the feature

of claim 1 wherein "if the predominant direction of traffic is in a downlink direction, selecting at least one optimum base station from the downlink candidate set". The Examiner appears to be suggesting that the single candidate list described by Ramos, could be considered a "downlink candidate set", while the single candidate list described by Shakhgildian could be considered an "uplink candidate set", and that one skilled in the art would somehow find it obvious to take the teachings of the maintenance of these two single candidate lists in two separate references and conceive of a method that includes maintaining separate uplink and downlink candidate sets, despite the fact that neither reference teaches or even suggests storing such separate uplink and downlink candidate sets. In fact, as noted above, these references specifically teach away from maintaining separate uplink and downlink candidate sets, as they are directed to finding a compromise between uplink and downlink performance by selecting a base station from a single base station candidate list.

As such, Applicant respectfully submits that one skilled in the art would see no reason to modify the base station selection method described in Ramos based on the base station selection method described in Shakhgildian. Moreover, modifying Ramos based on Shakhgildian would not allow one skilled in the art to arrive at the present invention, as neither reference teaches or even suggests all of the novel and inventive features of the claimed invention. That is, neither reference teaches storing separate uplink and downlink candidate sets, or selecting at least one optimum base station from one of the candidate sets based on the predominant direction of traffic with respect to a terminal.

Accordingly, the Examiner's reason to combine Ramos and Shakhgildian fails to satisfy the requirements set out in the Supreme Court's ruling in *KSR Int'l v. Teleflex, Inc.*.

Furthermore, Applicant notes that even if the Patent Office is able to articulate and support a suggestion to combine the references, it is impermissible to pick and choose elements from the prior art while using the application as a template—see *In re Fine*, 837 F.3d 1071 (Fed. Cir. 1988). It is respectfully submitted that incorporating the teachings of Ramos in relating to base station selection using only a single base station candidate list with the teachings of Shakhgildian in relating to base station selection using only a single base station candidate list,

is an attempt to arrive at claim 1 while using the present application as a template. This attempt is flawed because the Examiner's proposed modifications do not account for the fact that Ramos, and Shakhgildian fail to teach Applicant's claimed storing of uplink and downlink candidate sets, which of course means that they also fail to each or even suggest selecting at least one base station from either the uplink candidate base station set or the downlink candidate base station set based on the predominant direction of traffic with respect to the terminal.

If one were to use the present application as a template, which is nonetheless improper according to *In re Fine*, one would have to first modify Ramos or Shakhgildian so that it teaches Applicant's claimed "storing an uplink candidate set listing at least one candidate uplink base station;" and "storing a downlink candidate set listing at least one candidate downlink base station", as opposed to simply teaching the maintenance of a single candidate set for candidate base stations to provide both uplink and downlink communication. Also, one would have to modify at least one of the references so that it teaches "if the predominant direction of traffic is in an uplink direction, selecting at least one optimum base station from the uplink candidate set; and if the predominant direction of traffic is in a downlink direction, selecting at least one optimum base station from the downlink candidate set" as claimed by the Applicant. These numerous modifications cannot be regarded as obvious because the gap between the prior art and the claimed invention is too great. Applicant notes that the aforementioned examination guideline that issued on October 10, 2007 indicates that "the gap between the prior art and the claimed invention may not be 'so great' as to render the [claim] non-obvious to one reasonably skilled in the art." Therefore, the proposed combination of Ramos and Shakhgildian cannot render the claimed invention obvious.

In view of the foregoing, Applicant respectfully submits that claim 1 is both novel and inventive over the cited references, both alone and in combination. For at least the reasons provided above, independent claim 9 is also novel and inventive over the cited references.

By virtue of their claim dependencies on one of the independent claims, Applicant further submits that dependent claims 2 to 8 and 10 to 15 are novel, and also inventive, over the cited references for at least the same reasons.

Appl. No. 09/977,991
Reply to Office Action dated June 27, 2008

Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 1 to 15 under 35 U.S.C. § 103(a).

In view of the foregoing, early favorable consideration of this application is earnestly solicited. In the event that the Examiner has concerns regarding the present response, the Examiner is encouraged to contact the undersigned at the telephone listed below.

Respectfully submitted,

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Date: October 16, 2008

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